

March 16, 2011

Kirk Rosenberger Minnesota Department of Natural Resources 500 Lafayette Road St. Paul, MN 55155-4029

Re: 2010 Wild Rice Report

Mesabi Nugget Phase II Project

Dear Mr. Rosenberger,

On behalf of Mesabi Mining, LLC, enclosed is the 2010 Wild Rice Survey and Sulfate Monitoring. The purpose of this report is to determine the location of wild rice (*Zizania palustris* L.) stands downstream from the Project for which surveys were not carried out in 2009. The Study Area includes the St. Louis River from its confluence with the Partridge River to the Fond du Lac Dam and Second Creek from just south of the Tailings Basin to the start of the 2009 survey. This report is being submitted at the request of the MPCA to aid in the EIS and NPDES permitting and represents the final wild rice report to be submitted as part of the Phase II Project.

Please address any questions and comments directly to Keith Hanson at 218-529-8222 or via email at khanson@barr.com.

Sincerely,

Keith E. Hanson Senior Consultant

Enclosure

c: Jon Ahlness, USACE

2010 Wild Rice Survey and Sulfate Monitoring

St. Louis River and Second Creek

Mesabi Nugget Phase II Project

Prepared for Mesabi Mining, LLC

March 2011





2010 Wild Rice Survey and Sulfate Monitoring St. Louis River and Second Creek

March 2011

Table of Contents

1.0 Summary of Findings
2.0 Background
3.0 Wild Rice Survey
3.1 Wild Rice Survey Methodology
3.1.1 Methodology of Literature Review for Wild Rice in Downstream Receiving Waters from the Project
3.1.2 Methodology of Ground Verification and Density/Acreage Calculations
3.2 Wild Rice Survey Results
3.2.1 Results of 2009 Literature Review
3.2.2 Results of Ground Verification and Density/Acreage Calculations
4.0 Sulfate Monitoring
4.1 Sulfate Monitoring – 2009 and 2010 Data.
4.2 Sulfate Monitoring - Baseline Data
5.0 Wild Rice Summary
References 1

List of Tables

Table 1-1	Sulfate Concentrations along the St. Louis River	1
Table 3-1	Wild Rice Density Scale	5
Table 4-1	Comparison of Sulfate Concentrations and Water Depth at Wild Rice Stands in 2009 and 2010	
Table 4-2	Sulfate Monitoring Data Partridge and Second Creek	8
	List of Figures	
Figure 1	Wild Rice and Sulfate Sampling Location Locations for the St. Louis River	
Figure 2	Wild Rice and Sulfate Sampling Locations for Second Creek	
	List of Appendices	
A 1' A	• •	
Appendix A	Photographs of Wild Rice for the Study Area	
Appendix B	2010 Wild Rice Management Workgroup's "350 Significant Wild Rice Waters in	
	Minnesota"	

1.0 Summary of Findings

29.6

The purpose of this report is to determine the location of wild rice (Zizania palustris L.) stands downstream from the Project for which surveys were not carried out in 2009. The Study Area includes the St. Louis River from its confluence with the Partridge River to the Fond du Lac Dam and Second Creek from just south of the Tailings Basin (A) to the start of the 2009 survey (downstream of B).

The results from the 2010 ground surveys identified the presence of wild rice along the St. Louis River downstream of its confluence with the Partridge River (Figure 1). The sulfate level of the water sample taken in the location where rice was densest (density factor 2) was 113 mg/L (Table 1-1). Several sparse stands of wild rice (density factor 1) were identified approximately 500 and 1000 feet, respectively, downstream of Highway 100. Sulfate levels along the St. Louis River ranged from 29.6 to 113 mg/L.

Sulfate **Map Location Sample Name** Concentration (mg/L) PM-STL-KDM-01 WS-1 113 WS-2 PM-STL-KDM-02 53.2 WS-3 PM-STL-KDM-03 49.4 WS-4 PM-STL-KDM-04 44.7 WS-5 47.4 PM-STL-KDM-05 WS-6 PM-STL-KDM-06 59.4 WS-7 MN-STL-MRB2-D 29.8 WS-8 MN-STL-MRB2-C 31.2 WS-9 MN-STL-MRB2-B

Table 1-1 Sulfate Concentrations along the St. Louis River

A small stand of wild rice was identified along Second Creek in 2009 and 2010 at its confluence with the Partridge River (Figure 2). The majority of Second Creek was surveyed in mid-September 2009. The remaining portion upstream from the 2009 survey was completed in 2010. Reported in 2009, the average sulfate concentration at Highway 110 (just downstream from Second Creek on the Partridge River) was 164 mg/L.

Additional monitoring data (not limited to sulfate concentrations and wild rice density) would be needed in order to begin assessing the effects of sulfate on wild rice growth and production and the relative importance of other factors affecting wild rice density (e.g., hydrologic, weather, and ecological factors) (see Walker et al., 2010).

It is difficult to determine the health and history of wild rice in these waterbodies without a multiyear combined analysis of ground surveys as wild rice populations oscillate over an approximate 4to 6- year period. Delays in plant nutrient uptake and wild rice tissue chemistry influence wild rice growth and production from year to year (Walker et al., 2006; Walker et al., 2010). Other factors such as water level, parasites, herbivory, and weather conditions may also play a role, but no data has been collected over multiple years and published. Given that wild rice populations fluctuate over a multiple year time period, studies carried out over a shorter time period may not provide sufficient data to begin to determine the factors affecting the growth and production of wild rice. Studies carried out over too short a time period also make it difficult to determine the relative importance of sulfate compared to other factors on wild rice growth and production.

2.0 Background

The purpose of this report is to provide information in response to the Minnesota Pollution Control Agency's (MPCA) "Wild Rice Information Request" on May 28, 2009 with regard to the Mesabi Mining, LLC (Referred to as Mesabi Nugget) Phase II Project (Project) (see "2009 Wild Rice Survey and Sulfate Monitoring" report prepared for Mesabi Mining).

The MPCA requested the following information:

- A literature review to identify water bodies which could potentially support wild rice downstream from the Project. As a result of this literature review, an analysis of historic infra-red USGS photographs for the presence of wild rice in water bodies downstream from the Project was determined to be beneficial;
- Consultation with Bands of Chippewa and the 1854 Treaty Authority;
- A ground survey of wild rice presence and density;
- Information on current sulfate concentrations in the bodies of water where wild rice was identified.

In 2009, as part of consultation with the Bands of Chippewa (Bands), Mesabi Mining contacted representatives from Bois Forte Band of Chippewa, Fond du Lac Band of Lake Superior Chippewa, Grand Portage Band of Lake Superior Chippewa, and the 1854 Treaty Authority. Representatives from these bands and the 1854 Treaty Authority provided feedback in 2009. Water bodies that were not sampled in 2009, but which were thought to be potential discharge waters downstream from the Project, were sampled in 2010. These included the entire reach of the St. Louis River from its confluence with the Partridge River and a portion of Second Creek not sampled in 2009.

Historic and current infra-red USGS photographs were not analyzed in 2010. Based on results from 2009, the USGS photographs did not provide accurate information regarding the presence or density of wild rice. Therefore this analysis was not included in 2010.

3.0 Wild Rice Survey

The purpose of the Wild Rice Survey is to determine the presence and density of wild rice (*Zizania palustris L*, known as *Manoomin* in Ojibwe), an annual grass, on the St. Louis River downstream from its confluence with the Partridge River and on Second Creek (Figures 1 and 2). Since wild rice populations oscillate over an approximate 4 - to 6- year period, the following analyses and ground surveys were performed to determine past and current presence of wild rice:

- Literature review to identify water bodies which could potentially support wild rice downstream from the Project and
- On-the-ground verification of the presence and density of select wild rice stands.

3.1 Wild Rice Survey Methodology

The following section describes the methodologies used in obtaining information and data on wild rice.

3.1.1 Methodology of Literature Review for Wild Rice in Downstream Receiving Waters from the Project

To determine which water bodies downstream of the Project might potentially have wild rice, a literature review of historic and cultural information was conducted in 2009 and 2010. Information examined includes the 2008 DNR "Natural Wild Rice in Minnesota" Report, U.S. Department of Interior Geological Survey maps (Topographic maps), personal communication with the 1854 Treaty Authority, and the 2010 Wild Rice Management Workgroup's "350 Significant Wild Rice Waters in Minnesota." The Wild Rice Management Workgroup is a coalition of federal, state, tribal resource managers and other wild rice stakeholders. The list is periodically updated and was lat updated May 4, 2010 (Appendix B).

3.1.2 Methodology of Ground Verification and Density/Acreage Calculations

Surveys to estimate wild rice density and crop acreage were carried out in July, August, and September 2010. The same methods described in the "2009 Wild Rice Survey and Sulfate Monitoring" report for Mesabi Mining were followed in 2010. Table 3-1 provides information regarding the wild rice density classification and percent coverage.

Table 3-1 Wild Rice Density Scale

Wild Rice Density Classification	Description
1	<10% Wild Rice Coverage
2	10 – 25 % Wild Rive Coverage
3	25 – 50 % Wild Rice Coverage
4	50 – 75% Wild Rice Coverage
5	>75% Wild Rice Coverage

3.2 Wild Rice Survey Results

The following sections present the results of the wild rice literature review and survey for the Study Area. Ground surveys along the St. Louis River were carried out from July 26 - 30, 2010 and from August 24-27, 2010. A ground survey of Second Creek downstream of B (see Figure 2) was carried out in mid– September 2009 and upstream of B on September 9, 2010.

3.2.1 Results of 2009 Literature Review

Below is an examination of the literature regarding the potential presence of wild rice along the St. Louis River. According to Minnesota Rules Chapter 7050.0470, sections of the St Louis River upstream of the Study Area are classified as wild rice waters. While no wild rice was identified within the Study Area, a ground survey was carried out in order to determine from ground reconnaissance whether rice was present.

- Section 2.0, page 3 of the "2009 Wild Rice Survey and Sulfate Monitoring" report prepared for Mesabi Mining provides determination of the Study A rea as a result of consultation with Bois Forte Band of Chippewa, Fond du Lac Band of Lake Superior Chippewa, Grand Portage Band of Lake Superior Chippewa, and the 1854 Treaty Authority (Barr, 2009).
 - ".... Feedback was received from 1854 Authority's Darren Vogt on July 10, 2009 confirming that Mesabi Mining proposed study area included water bodies with potential for the presence of wild rice stands. Mr. Vogt mentioned the St. Louis River, including several sites upstream from its confluence with the Partridge River. After a follow-up phone call, Mr. Vogt agreed that those sites were outside the scope of waters potentially affected by discharge waters. Mr. Vogt also sent Mesabi Mining a picture of wild rice stands near Highway 110 on the Partridge River dated July 29, 2009. Three grid density calculations were made in that location. After follow up emails and phone calls to representatives of the three bands, they said that they did not have any additional input beyond what Mr. Vogt provided."

- The 2010 Wild Rice Management Workgroup's "350 Significant Wild Rice Waters in Minnesota" identifies several reaches of the headwaters of the St. Louis River as historically supporting wild rice (similar to information provided by Darren Vogt in personal communication above). It does not, however, mention reaches of the river within the Study Area.
- Page 104 of the MnDNR Investigational Report #69: A Biological Survey and Fishery Management plan for the Streams of the Saint Louis River Basin (Moyle and Kenyon, 1947) includes discussion of the presence of wild rice in two rivers which flow into the St. Louis River. These rivers, however, are not part of the mainstem of the St. Louis River. The report reads: "Historic presence of wild rice in the St. Louis River Basin. #38. Zizania aquatica L., wild rice. Rare in most of the streams; most common in the western portion of the [St. Louis] drainage basin. The most extensive stands are in the Floodwood and Swan River drainage basins."
- The MnDNR, Section of Fisheries "Completion Report: A Study of the St. Louis River" identified wild rice in three locations along the upper St. Louis River: downstream from Seven Beaver Lake at river miles 187 to 189, 176 and 165. Pages 25 27 include narrative description of its presence. Within the Habitat Assessment section, River Mile 188.7 it was noted, "...Wild rice was extensive and extended from the shore to a depth of three to four feet." At River Mile 171.0 it was noted, "Wild rice beds dominated this reach, with a deeper channel down the center, but no distinct shoreline." These locations, however, were not within the Study Area.

3.2.2 Results of Ground Verification and Density/Acreage Calculations

Wild rice was identified from ground surveys performed on the St. Louis River just downstream of its confluence with the Partridge River. Wild rice was not identified along Second Creek (Figures 1 and 2). The densest stand of wild rice (density factor 2) was identified just upstream from Highway 100, with dimensions of approximately 15 feet x 80 feet (see photograph A-1). The stand was not dense enough, however, to carry out grid sampling. Several sparse stands of wild rice (density factor 1) were identified approximately 500 and 1000 feet respective ly downstream of Highway 100 (Figure 1 and Photographs A-1, A-2, and A-3).

4.0 Sulfate Monitoring

Sulfate monitoring was carried out during wild rice surveying in 2010. This data is included in Table 1-1 and below along with data collected in from 2008 and 2009.

4.1 Sulfate Monitoring – 2009 and 2010 Data

Results of sulfate analyses performed on water samples collected during wild rice surveys are presented in Table 4-1. Nine water samples were collected along the St. Louis River in 2010. One sample was collected in the location where wild rice was found (WS -1) (Table 1-1). Additional sampling was carried out in locations comparable to locations sampled by Lindgren et al. 2006.

Table 4-1 Comparison of Sulfate Concentrations and Water Depth at Wild Rice Stands in 2009 and 2010¹

		Sulfate	Water Depth (in)		
Water Body	# Samples	Mean	Std. Dev.	Range	Mean
St. Louis River 2010	9	50.9	25.7	29.6 - 113	14
Pokegama Bay 2009	4	7.6	0.8	7.0 - 8.8	23
St. Louis River 2009	6	17.7	7.4	8.0 - 27.4	15

All water samples were analyzed for sulfate using an ion chromatography method (EPA 300.0). More detailed results of the 2009 data are included in the "2009 Wild Rice Survey and Sulfate Monitoring" report prepared for Mesabi Mining.

4.2 Sulfate Monitoring - Baseline Data

Sulfate concentrations have been measured at one location along the Partridge River at the Highway 110 bridge crossing (MNSW12) and one location on Second Creek just before its confluence with the Partridge River (MNSW8) since 2008 as part of an ongoing water quality monitoring program for the Mesabi Nugget Phase II Project (see Figure 1 of "2009 Wild Rice Survey and Sulfate Monitoring" report). An additional water quality monitoring station on the Partridge River just downstream of the Colby Lake outlet (MNSW14) was established in June 2009. Additional samples were taken at MNSW14 monthly from August to December 2009 and included in this report. These data are summarized in Table 4-2.

7

¹ Two water depths were measured at locations where wild rice was identified in 2010. The water depth for the St. Louis River 2010 is the mean of those two values.

Table 4-2 Sulfate Monitoring Data Partridge and Second Creek²

Monitoring Station	Water Body	Location	Monitoring Period	Average (mg/L)	Std. Dev. (mg/L)	Min. (mg/L)	Max. (mg/L)
MNSW14	Partridge River	Below Colby Lake outlet	June – December 2009	49.2	18.3	28.7	72.6
MNSW12	Partridge River	At Highway 110	May 2008 - August 2009	164	103	43.0	302
MNSW8	Second Creek	Near outlet to Partridge River	May 2008 - August 2009	474	111	269	624

As discussed in the "2009 Wild Rice Survey and Sulfate Monitoring" report, measured concentrations of sulfate in the Partridge River were greatest at the most downstream monitoring location (MNSW12), averaging 164 mg/L and ranging from 43.0 mg/L to 302 mg/L. For the same period of record (May 2008 to August 2009), sulfate concentrations in Second Creek averaged 474 mg/L and ranged from 269 mg/L to 624 mg/L.

More recent data from upstream of the Second Creek confluence (MNSW14, from June to December 2009) confirm that sulfate concentrations in the Partridge River above S econd Creek are relatively low. For this period of record, sulfate concentrations downstream of the Colby Lake outlet averaged 49.2 mg/L and ranged from 28.7 mg/L to 72.6 mg/L.

² Additional sulfate data was collected monthly from September to December 2009 at MNSW14. The average, standard deviation, minimum, and maximum values were recalculated accordingly.

5.0 Wild Rice Summary

Results from 2010 ground surveys identified the presence of wild rice in three locations on the St. Louis River within several thousand feet of its confluence with the Partridge River. Wild rice beds upstream of the Partridge River confluence had a density factor of two (10 to 25%). Wild rice beds downstream of the Partridge River were small and sparse, having a density factor of one (less than 10%). Wild rice was not found along the remaining reach of the St. Louis River (up to Fond du Lac Dam), nor along Second Creek. The sulfate concentration from one grab sample at the location of wild rice on the St. Louis was 113 mg/L. Sulfate concentrations downstream from that location to the Fond du Lac Dam ranged from 29.6 to 59.4 mg/L.

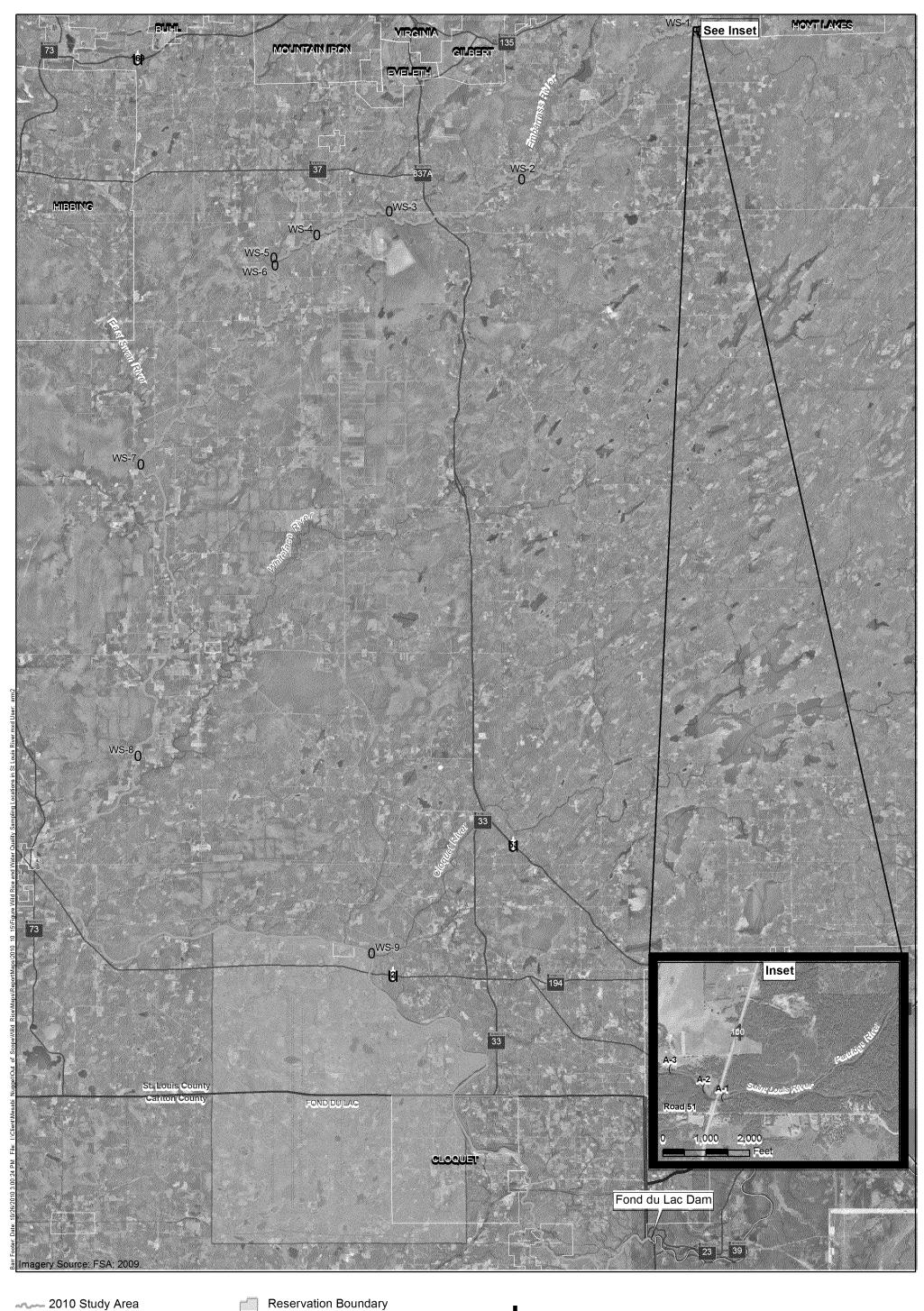
It is difficult to determine the health and history of wild rice in these water bodies without a multiyear combined analysis of ground surveys as wild rice populations oscillate over an approximate 4- to 6-year period. Delays in plant nutrient uptake and wild rice tissue chemistry influence wild rice growth and production from year to year (Walker et al., 2006; Walker et al., 2010). Other factors such as water level, parasites, herbivory, and weather conditions may also play a role, but no data has been collected over multiple years and published. Given that wild rice populations fluctuate over a multiple year time period, studies carried out over a shorter time period (one year) may not provide sufficient data to begin to determine the factors affecting the growth and production of wild rice. Studies carried out over too short a time period also make it difficult to determine the relative importance of sulfate compared to other factors on wild rice growth and production.

Additional monitoring data (not limited to sulfate concentrations and wild rice density) would be needed in order to begin assessing the effects of sulfate on wild rice growth and production. Such monitoring data should include analysis of other water and sediment anion and cation concentrations, plant and seed biomass and plant nutrient content, to name several of the most commonly measured. Such data is also important in order to determine the effects of sulfate relative to other factors on the growth and production of wild rice.

References

- 1854 Treaty Authority. 2008. Wild Rice Monitoring and Abundance in the 1854 Ceded Territory (1998 2008).
- Minnesota Department of Natural Resources. 1947. Investigational Report #69: A Biological Survey and Fishery Management plan for the Streams of the Saint Louis River Basin (Moyle and Kenyon, 1947).
- Minnesota Department of Natural Resources. 2006. Section of Fisheries: Completion Report: A Study of the St. Louis River (Lindgren et al. 2006).
- Minnesota Department of Natural Resources. 2008. *Natural Wild Rice In Minnesota: A Wild Rice Study* document submitted to the Minnesota Legislature by the M innesota Department of Natural Resources February 15, 2008
- Walker, R.D., Pastor, J., Dewey, B.W. 2006. "Effects of wild rice (*Zizania Palustris* L.) straw on biomass and seed production in northern Minnesota." *Canadian Journal of Botany*, 84, (1): 1019-1024.
- Walker, R.D., Pastor, J., Dewey, B.W. 2010. "Litter Quantity and Nitrogen Immobilization Cause Oscillations in Productivity of Wild Rice (*Zizania palustris* L.) in Northern Minnesota." *Ecosystems*,13: 485-498.

Figures



2010 Study Area

Water Sample Collection Location Wild Rice Density

1 <10% Wild Rice Coverage

2 10-25% Wild Rice Coverage

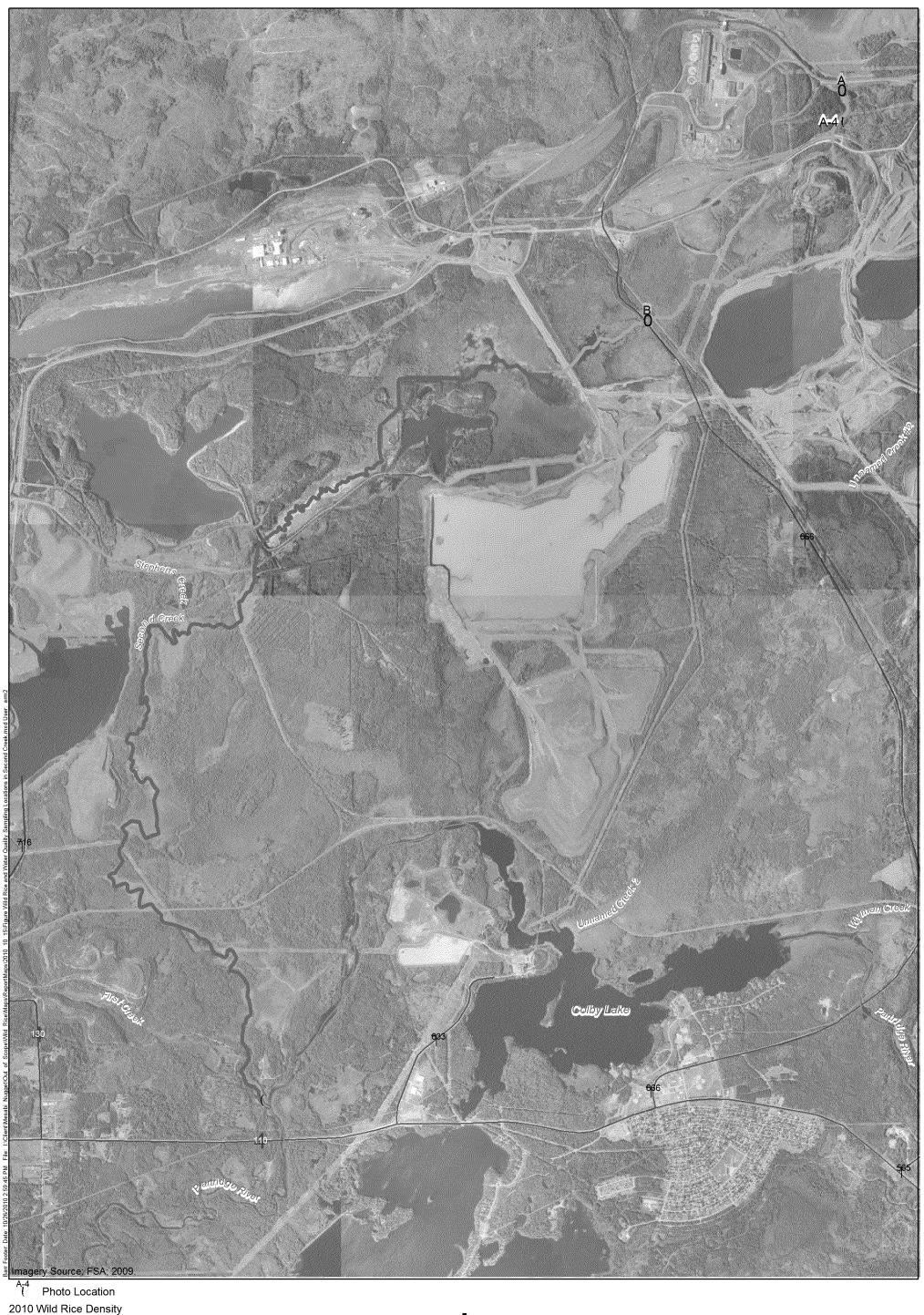
Photo Name

City Boundary

County Boundary

2.5 1.25 0 2.5 Miles

Figure 1
WILD RICE AND SULFATE SAMPLING LOCATIONS FOR THE ST. LOUIS RIVER Mesabi Nugget Phase II Hoyt Lakes, Minnesota



2010 Wild Rice Density

(1 <10% Wild Rice Coverage

Water Quality Sampling Locations

2009 Study Area

2010 Study Area

----- Streams ~ _ Stream Channel



Figure 2
WILD RICE AND SULFATE SAMPLING
LOCATIONS FOR SECOND CREEK Mesabi Nugget Phase II Hoyt Lakes, Minnesota

Appendices

Appendix A

Photographs of Wild Rice for the Study Area



Figure A-1 St. Louis River, July 26, 2010



Figure A-2 St. Louis River, July 28, 2010



Figure A-3 St. Louis River, July 28, 2010



Figure A-4 Second Creek, September 9, 2010

Appendix B

2010 Wild Rice Management Workgroup's "350 Significant Wild Rice Waters in Minnesota"

					.a. 4	g de la companya de l		d	e the	Sales Contract	and the same of th		production and the second		de la constantina della consta	de c	J*
e ^{NA}	or Mark	God Mc	at atter	. School	ALLEY MAN TO THE THE PARTY OF T	affector .	.160	AR PE	March Co.	, and		A	and the second	d	A CONTRACTOR OF THE PARTY OF TH	O Mee.	defile
C ^{d'0'} Aitkin	e ^{ge} White Elk	01014800	5 ^{0−} 46	750 350	1 M MNDNR - Wildlife/DU	Rice thickest in south half of lake, band around north side.	450	tair	low.	Hay.	C ^{of}	WIW.	or or	Q _b	Q ^A ,	WILL	Rice thickest in south half of lake, band around north side.
Aitkin	Rice	01014800			0 USPWS - Rice take NWR	Rice is located in varying degrees across entire basin.	MUR	permit only		easy	Lake within Rice Lake National Wildlife Refuge.		VC VC	Federal	USFWS		Rice is located in varying degrees across entire basin.
Aitkin	Flowage	01006100	720	432	140 USACOE – Sandy Lake RA	Can include almost complete coverage of south half of lake,		good	moderate	easy	Water level managed as part of the USACE San	ody WLM	vc	Federal	USACOE		Can include almost complete coverage of south half of
Altkin	Mallard	01014900	354	320	185 A MNDNR - Wildlife	Rice can cover almost all open water in basin, some holes in		pood	high	easy	Lake part of Ripple River State WMA.	BDR	NatOut				Rice can cover almost all open water in basin, some holes in
											Water level managed as part of the USACE Sar	ndy					
Aitkin	Aitkin	01004000	850	298	11 USACOI - Sandy Lake RA	Around shoreline and outlet.		fair	low	fair	Lake Recreati	WUM	vc	Federal	USACOE		Around shareline and outlet.
Altkin	Shovel	01020000	230	207	36 M MNDNR-Wildlife/DU	Rice can cover almost entire open water area of basin.		fair	moderate	fair	Primary lake access is through private land.	BDR	NatOut				Rice can cover almost entire open water area of basin.
Arkin	Sandy River Lake	01005000	368	200	48 USACOF - Sandy Lake RA			fair	moderate	9201	Water level managed as part of the USACE Sar Lake Recreati	WIM	VC	Federal	USACOF		
Aitkin	Minnewawa	01003300	2,451	130	24	Rice east and northwest portions of the lake.		fair	moderate	fair			FC	State	MNDNR - Waters		Rice sest and northwest portions of the lake.
Aitkin	Twenty	01008500	153	119	53 M MNDNR-Wildlife/DU	Rice can cover almost entire open water area of basin.		fair	moderate	easy		BDR	NatOut				Rice can cover almost entire open water area of basin.
Altkin	Moose	01014000	148	117	77 A	Rice can cover almost entire open water area of basin.		good	moderate	easy	Lake adjacent to Hay Point State WMA.		NatOut				Rice can cover almost entire open water area of basin.
Altkin	Rat House	01005300	122	100	2 M MNDNR-Wildlife/DU	Rice can cover almost entire open water area of basin.		fair	low	fair		BDB	NatOut				Rice can cover almost entire open water area of basin.
	NAC PROOSE								iow	1411	Water level managed as part of the USACE Sar	ndy					
Aitkin	Big Sandy	01006200	9,385	94	98 USACOE - Sandy Lake RA	Primarily in the Prairie River inlet flowage to lake.		fair	low	easy	Lake Recreati Impoundment within Moose Wallow State	WIM	vc	Unknown	USACOE		Primarily in the Prairie River inlet flowage to lake.
Altkin	Moose River Pool	01035800	900	89	MNDNR-Wildlife			dosed			WMA.	WIM	VC			Wild rice density is moderate (3), and its condition was goo	
Aitkin	Spruce	01015100	80	80		entire lake				difficul	1988: 76 acres. 1949: 80 acres [100%]						entire lake
Altkin	Newstrom	01009700	97	76	5 M MNDNR-Wildlife/DU	Rice can cover almost entire open water area of basin.		fair	low	easy	Lake within Newstrom State WMA.	BDR	NatOut				Rice can cover almost entire open water area of basin.
Altkin Altkin	Salo Marsh State WMA Imp. Mud	01041500	690 135	76 68	MNDNR - Wildlife A MNDNR - Wildlife	Account shareline of basin		closed		difficul	Impoundment within Salo Marsh State WMA.	WLM BDR	VC NatOut			Wild rice density is lush (4), and its condition was excelle	Around shareline of basin
Aitkin	Gun	01009900	735	60		NE bay.				easy			c				NE bay.
Aitkin	Section Ten	01011500	440	52	1 M					easy						Wild rice density is lush (4), and its condition was excelle	Located on east and west ends of lake, also acres on
Altkin	Ripple	01014600	676	50	6	Located on east and west ends of lake, also acres on Ripple		fair	low	easy			VC				Ripple
Aitkin	Rock	01007200	366	50						easy	Impoundment within Moose Wallow State						
Altkin	Moose Willow WMA - Willow	w Pu01043100	300	50	MNDNR - Wildlife			closed			WMA.	WLM	VC	State	MNDNR - Wildlife		
Aitkin	Unnamed - Little Willow Rive		140	50	M MNDNR - Wildlife			closed			Impoundment within Little Willow River State WMA.	WLM	w			Wild rice density is scattered (2), and its condition was fa	
								Livsey			Currently no rice: highwater - beavers. 1990:					who he delish is statue of (2), and to continual was a	
Aitkin	Rice	01000500	83	50	M MNDNR - Wildlife					difficul	66% rice Upper end of Wankenabo: "88" - 20 to 30 vd ri	BDR	NatOut BPL	Private	Private		
Altkin	Waukenabo	01013600	819	49		Entire lake				easy	around 70% o	ing	vc	State	MNDNR - Waters		Entirelake
Aitkin	Rat	01007700	442	45	2	Largest stand is the NE.				eary			NatOut				Largest stand in the NE.
Altkin Altkin	Elm Island Sindin	01012300	656 43	30	12	Primarily around inlet and outlet. Most of lake except neuter		fair	low	easy			NatOut NatOut				Primarily around inlet and outlet. Most of lake except center
Aitkin	Red	01031000	97	4	6	Around share				trasy			Matour				Around share
Altkin	Section Twelve	01012000	167	1	5	SE and NE edges.											SE and NE edges.
Altkin	Prairie River	01/6			34												
Aitkin Angka	Ripple River Carlos Avery WMA - Popl 9	01r3 W9001009	269	120	12 MNDNR - Wildlife							WIM	vc bi	State	MNDNR		
Anoka	Carlos Avery WMA - Pool 3	W9001003		120	MNDNR - Wildlife							WLM	VC BI	State	MNDNR		
Anoka	Hickory	02009600	41		5				low		added from state harvester survey.						
Becker	Big Besswood	03009600			6 M R-WE		WEIR	good	low	easy				Tribal	R - WE		
Becker	Chippewa Tamarark	03019600		288	1 USFWS - Tamarac NWR HSFWS - Tamarar NWR/WF			good	high low	fair		WLM	vc	Federal Federal	USFWS - Tamarack NWR		
Becker	Bior	03020100		245	USFWS - Tamarac NWR/WE			good	high	easy		DDII	vc	Pederal	USFWS - TamarackNWR		
Becker	Rack	03029300		240	R*WE				low								
Becker	Little Flat	03021700	235	211	USFWS - Tamarac NWR/WE		WEIR	good	high	fair	Boy inlet: 40 acres. NS: 5 acres, 5, 20, 4, 10. 30		NatOut	Federal	USFWS - Tamarack NWR		
Becker	Height Of Land	03019500	3,943	197	22			fair	moderate	easy	frin	υπ	FC	State	MNDNR - Waters		
Becker	Flat	03024200		197	6 USFWS - Tamarac NWR/WE			good	high	fair		WLM	FC	Federal	USPWS -TamarackNWR		
Becker	Rice	03029100		196	M				low				VC VC				
Becker Becker	Shell Hubbel Pond	03010200			11 M 2 M			fair fair	moderate moderate		1993 data: 80 acres		VC Unknown	Private State	Bob Merritt - DL MNDNR		
Becker	Spindler	03021400		125	USFWS-TamaracNWR/WE		WEIR	good	high	easy		BDR	NatOut	Tedecal	USPWS -TamerackNWR		
Becker	Big Rat	03024600	1,102	110	R-WE		WEIR	fair	moderate								
Becker	Buffalo	03035000	444	89	1 R-WE	Includes wild rice on Buffalo River.							Unknown	Federal	USFWS -TamarackNWR		Includes wild rice on Buffalo River.
Becker Becker	Mud Schultz	03006700	103	83	M						1996 data Besver MGD						
Becker	Abners	03027000	100	80	M MNONR - Wildlife/DU			good	moderate	fair	scarce most	BDR					
Becker	Lower Egg	03021000	171	75	9 USPWS - Tamarac NWR/WE		WER	good	maderate	fair		BDR	NatOut	Pederal	USFWS-TamarackNWR		
Becker	Trieglaff	03026300	111	56													
Becker Becker	Winter Booth	03021600	117 48	43 43	USPWS - Tamarac NWR/WE USPWS - Tamarac NWR/WE		WEIR	fair fair	moderate low	fair		WLM BDR	VC NatOut	Federal Federal	USFWS - TamarackNWR USFWS - TamarackNWR		
Becker	Blackbird	03019700	284	42	4 USPWS - Tamarac NWR/WE			good	high	easy			NatOut	Federal	USFWS - TamarackNWR		
Becker	Mud	03002300	85	42	Private				low			8DR					
Becker Becker	Two Inlets Johnson	03001700	643 181	40	 Private USPWS - Tamarac NWR/WE 			fair	low	easy	1995 data	BDR	FC NatiOut	State Federal	MNDNR USFWS - TamarackNWR		
Becker	Bush	03021200	110	40	USFWS - Tamarac NWR/WE		WEIR	good	high	CITY		WLM	VC	Federal	USFWS - TamarackNWR		

														, p	defined.				
	,				187	44	Market Control of the		de	e) July	pte .	gh .		art was	der Bertele and		,a	**	A.
	AND THE PARTY.	Down the	AND ROLL	a stree	de de	S. March	And the second second	1500	Alle V	A T	A. C.		AL PART	the str.	Me de	a ^t	and the same of th	*0 kg	A. office.
	e ^p Little Basswood	03009200	105	31	, ,	e-Mt	th.	WEIR	42	low	6351	o.	4.	Q,	o,	Tribal	R-WF	4	44,
	Carmen	03020900	217			JSFWS - Tamarac NWR/WE		WEIR	fair	moderate	fair		NOR.	FC		Federal	USFWS-TamerackNWR		
	Upper Egg Cabin	03020600	493 38			JSFWS - Tamarac NWR/WE B-WF		WEIR	poor	fow moderate	fair			NatOut		Federal	USFWS - TamarackNWR		
	Little Round	03030200	565		7 A F	h-WE				low									
	Unnamed (Indian Creek Impo Big.	04004900	13 3,565	250	2 M E	t-WE R-LL/MNDNR – Fisheries	NW & W bays.	LLIR	fair fair	moderate low	cass		ROR	VC NatOut					NW & W bays.
i	Puposky	04019800	2,120	236	M			-	poor	low	fair								
	Rabideau Bootleg	04003400	723 308	217 185	33 M				poor	high low	fair			FC NatOut	Old	Federal	USFWS		
i	Kitchi	04000700	1,850	185		N-LL	Creek to Little Rice.	LLIR	poor	low	fair			NatOut					Creek to Little Rice.
	Manomin Pimushe	04028600	288 1,350		13 M F	MNDNR - Wildlife	NW bay.	LLIR	good	moderate low	fair fair		BOR	NatOut					NW bay.
i	Three Island	04013400	836	125	2					low	easy			FC		County	Co. Park		
il i	Rice Pond Burns	04005900	247 131	123		MNONR - Wildlife R-LL		LLIR	good	low	easy difficul	Within Rice Pond State Waterfowl Refuge.	BDR	NatOut NatOut					
	Irving	04014000	644	97		N-LL	NW bay.				fair			NatOut					NW bay.
:	Big Rice Moose	04003100	642 617	96 96		r-II.	N. & SW bays.	LLIR	good		difficul fair			NatOut NatOut					N. & SW bays.
	Little Puposky	04019700	158 458	95 69	M						635Y			NatOut					SW bay.
	Medicine Little Rice	04001500	123	60	M	t-u.	SW bay. Around shoreline and inlet/outlet.	LLIR	good	low	fair difficul	added from lcmr.shp							SW bay. Around shoreline and inlet/outlet.
	Erickson Cranberry	04006800	111 77	50 46	1 M					low	difficul	Early 80's data		NatOut NatOut					
														Nation					
i	Turtle River Lone	94011100	1,664		15		rice alone shore, thick in inlet and NW portion			moderate		No rice known to occur on lake, rice only in rive							
	Tamerack River						good stands in several stretches												
	Perch Kettle	09003600 09004900	796 611	597 415		R-FDL MNDNR - Wildlife		1854, FDLIF 1854	t good	moderate	0301	1997 data	BDR, D BDR, BR	VC		Tribal	R-FDL		surveyed annually by 1854 Treaty Authority
	Miller	09005300	156	156	,	R-FDL		1854, FDUI		high	,		BDR						anteria amanya, 12-4 manyaanism
	Rice Portage	09003700	832	120	1 1	R-FDL		1854, FDLIF		high		100 acres of open water (75% rice) 1987: 75%, 1997: 50%, History of beaver	BDR, D	VC		Tribal	R-FDL		
	Dead Fish	09005100	153	115		R-FDL		1854, FDLI8		high		problems - plugged		Unknown		Tribal	R-FDL		
	Jaskari Moose Hom River	09005000 09r1	74 123	74 61		R-FDL	wide slow section of river extending from Moose Lake into Pine Co	1854, FDLH		high			BDR, D			Tribal	R = FDL		
	Tamarack	09006700	228.0	59.0							1997 data	, 2009 Survey							
	Island Tamarack Lake	9906000	456 228	46	7		stands in narrows and in river			low		1997 data: 10% of Lower Island Lake							
	Hay	9001000	215				rice along shore, some denser areas/bays												
	Wild Rice Little Kettle	9002300			,	Fond du Lac Reservation	sparserice over most of lake can have good stands over about three-fourths of lake												
	Leech	11020300	100 417	4 000		USACOE - Leech Lake RA	Bear I.; Blackduck & Grassy Pts; Boy, Federa Dam & Headquart	B-11	good	high	essy		WLM	vc	USACOE dam	Federal	USACOE		Bear I.; Blackduck & Grassy Pts; Boy, Federa Dam & Headquart
								N-LL											Historic coverage of approx. 60%, best stands along north
	Big Rice Mud	11007300 11010000	2,717	1,411	10 M I	MNDNR - Wildlife/DU MNDNR - Wildlife	Historic coverage of approx. 60%, best stands along north an Found over extensive areas of the lake.	LLIR	fair good		easy easy	State Waterfowl Feeding and Resting Area. Within Mud-Goose State WMA.	BDR, BR WLM	FC VC	Stoplogs	State State	MNDNR MNDNR		an Found over extensive areas of the take.
									8000		1079								Third River flowage (500 acres), Raven flowage (450
	Winnibigoshish Laura	11014700 11010400	1,424			USACOE - Winnibigoshish L. RA MNDNR - WIHIfe/DU	Third River fitzwage (500 acres), Reven flowage (450 acres), Northern 2/3rds of main lake and east, south bays.	LLIR	fair	high moderate	easy		BDR	VC NatOut	Sliding grate	Federal	USACOE		acres). Northern 2/3rds of main lake and east, south bays.
												Within Mud-Goose State WMA, water levels							
	Goose Boy	11009600 11014300	844 5,544			MNDNR-Wildlife R-LL	In good years, almost 100% coverage of open water area.	LUB	good	moderate high	easy	managed by dam on M	BDR	VC NatOut	Sliding grate	State	MNDNR		in good years, almost 100% coverage of open water area.
													BDR			State			Fairly continuous coverage in north bay and in a band
	George Lomish	11010100	720 282	262 197		MNDNR - Wildlife/DU R-LL	Fairly continuous coverage in north bay and in a band along	LUB	poor good	low moderate	easy		BDR	VC NatOut		State	MNDNR - Waters		along
	Rice	11016200	342	137					good	moderate	easy	1997 data							It was found along the river channel throughout the
	Gull River	11/1	219			Industrial - MN Power	It was found along the river channel throughout the surveyed		fair	low	fair			vc		Industrial	Industrial - MN Power	There were several very thick stands of Rice although most a	surveyed
	Rice (Pillager) Lind (Lindsey)	11032100	232		12 A 1	MNDNR - Wildlife/Private	Wild rice stands can occupy up to 80% of basin area.		fair		difficul		BDR	NatOut		Private	Private		Wild rice stands can occupy up to 80% of basin area.
	McCarthey	11016800	194	78		Private			fair	low	difficul	1994 data	BDR	Nations		Private	see Rayfile		
	Farnham	11051300	142	71		MNDNR-Wildlife	25% in an average year to 100% in a good year.		fair	low	6359	only current public access is Potlatch land on 5% corner of	V RDR	NatiOut		Private		typically moderate	25% in an average year to 100% in a good year.
	Six Mile	11014600	1,288	70		JSFS	2.74 man arcings you to 2007 mag 2000 year.	LLIR	poor	low	fair		WIM	VC.				typicany mountain	2.70 main and age year to 2004 in a good year.
	Washburn Brockway	11005900 11036600	1,768	60 55	14				good	moderate	easy	1996 data		PC		State	MNDNR - Waters		
												Latern Bay, Broud Water, Narrows, Dem on Girl							
	Woman Swift	11020100 11013300	5,360 359	54 51	2 M				fair	low	easy	Lake, Otter Ba		FC NatOut		Unknown			
	Chub	11051700	57	51		R-LL		LUR	good	moderate	easy	Within Mud-Goose State WMA.		NatOut					
	Twin	11012300	297	50		MNONR - Wildlife/DU					difficul	Added to MNONR Brainerd's management list i	BDR	c		Federal	USFWS		Center and eastern portions of basin, lify pads dominated
	Lower Hand	11025100	122	50		MNDNR - Wildlife	Center and eastern portions of basin, By pads dominated we		poor	low	difficul	2007.	BDR	NatOut		County		moderate in 2007	we
	Lizotte	11023100	75	50	,	MNDNR - Wildlife	Wild rice can over a majority of basin in a good year.		fair	low	fair		BDR	NatOut					Wild rice can over a majority of basin in a good year. Wild rice can completely cover open water portion of
	Rice (Carrol's) Big Birch	11022790	46 255	46 45	M i	,	Wild rice can completely cover open water portion of basin.					Privately managed wild rice bed.		NatOut					basin.
	Pine Mountain	11041100	1,657	40	80				fair	low	easy			ANTOU					
	Hattie Beuber	11023200 11035300	592 135	40 15			Fair band along shoreline.		fair	moderate		1997 Data: 150 ft fringe of rice all around							Fair band along shoreline.
	Island	11010200			8		In various bays.		ram	muserate	cesy	1997 Marie 1997 Lange of rice as aroung						scarce	In various bays.

Debugs of the control of the control

						AR .			Hall	ate.	A		All at a self				
ah.	. Warra	No.	100	St. S	a will the state of	all color	.6	A Park	at the	, a ¹		d	And the state of t		at the training of the same of	- Bet-	
Colle.	Marie .	00 [®] √	3 ⁵⁰ 40°	Mar	MNDNR - WSINITE/R-1	white.	1118	KIEP.	low (all all all all all all all all all al	Angele .	State Waterfrai Refuse	BDR	Nation of the	ONE	Ower	and .	Mr.
Cass Cass	Drumbeater Moose	11042400	92	1 5	L MNDNR - Wildlife/R-LL	Practically no rice present.	LLIR	poor	low	difficul	State Waterlowi Refuge.	BDR	NatOut NatOut				Practicallyno rice present.
Cass	Portage Lower Bice	11047600	277	568 44	s n-wr		WEIR	good	high		Good regular producer		wc	Tribal	R - WF		
Clearwater	Upper Rice	15005900	1,860 1,	116 25	M MNDNR - Wildlife/WE		HEIN	8000	high	easy	Adjacest to Upper Rice Lake State WMA.		VC Double tog	State	MNDNR - Wildlife		
Clearwater	Pine	15014900	1,465	220	Red Lake Watershed District					easy	Adjacent to Pine Lake State WMA. Adjacent to Mud Lake State WMA. Potential fo	,	vc	State	MNDNR - Fisheries		wide band of rice around most of lake except pars of the
Clearwater	Mud	15006100		103 17		wide band of rice around most of lake except pars of the wes			moderate	easy	management, of						wes
Clearwater Clearwater	Unnamed Minerva	15007900			M 3 A R-WE				moderate	difficul							
Clearwater	Sucker Clearwater Biser	15002000 15r1	90	14 7	7				low moderate	easy	Adjacent to Sucker Lake State WMA.						
Cook	Marsh	16048800	69			52 acres in 1998, less in 99-01, typically sparse to fair coverage											
Cook Cook	Swamp River Northern Light	16090100 16008900		153 1 133	1 USFS		1854 1854	good	low	easy		WLM	C IC	State Federal	State USFS		
Cook	Elbow	16009600		124 5	5		1854	fair	low	easy							
Cook	Rice	16045300	230	92 1	1		1854	fair	low	fair	1997: 92 acres (40%), normally 20% as in 1998.						
Cook	Kelly	16047600	188	56			1854	poor		difficul	1997 data: very consistent in rice production -			Federal	USFS - BWCA		
Cook	Moore	16048900		48			1854	poor		easy	really spars						
Cook	Fourmile Mark	16063900	593 140	42 2	2	can have good rice over most of lake, used by harvesters	1854	fair	low	easy							
Cook	South Fowl	16003400	1,440			moderate to dense patches of rice											
Cook Crow Winz	North Fowl Lower Dean	16003600 18018100	1,020 372	360 62	M MNDNR-Wildlife	moderate to dense patches of rice Wild rice can completely cover basin.		good	high	easy	Lake adjacent to Lower Dean State WMA.	BOR	NatOut				Wild rice can completely cover basin.
Crow Wing	Platte				A MNDNR - Waters	Wild rice located in NW bay, around shoreline.		poor	low	easy		WLM	FC	State	MNDNR - Waters		Wild rice located in NW bay, around shoreline.
Crow Wing	Duck	18017800	310	175 3	3 M MNDNR - Wildlife	Wild rice can completely cover open water portion of basin (fair	low	easy	Lake within Duck Lake State WMA.	WLM	vc	State	MNDNR-Wildlife		Wild rice can completely cover open water portion of basin (
Crow Wing	Nice (Deerwood)	18006800	185	170 7	7 A MNDNR - Wildlife	Wild rice densest in northern 2/3rds of basin, around shore		fair	moderate	easy		BDR	,	County	County		Wild rice densest in northern 2/3rds of basin, around shore
Crow Wing	Rice (Hesitation WMA)	18005300			D M MNDNR-Wildlife/DU	Wild rice densest in western 2/3rds of basin.		fair	moderate	easy	take within Hesitation State WMA.	WLM	FC	State	MNDNR - Fisheries		Wild rice densest in western 2/3rds of basin.
Crow Wing	Rice (Clark Lake)	18032700	181	124	M MNDNR - Wildlife/DU	Wild rice can completely cover basin, open in the middle.		feir	low	fair		SDR	c	County	Co. DOT		Wild rice can completely cover basis, open in the middle.
Crow Wing	Lizzie	18041600	384	100 17		Wild rice located around east, north and outlet portion of b			low				**	State	M NDNR - Waters		Wild rice located around east, north and outlet portion of
Crow Wing	Garden	18032900	262	100 1	M MNDNR - Wildsfe/DU	Wild rice denest along east share and north bay.		poor	low	easy		BDR	c	County	Co. DOT		Wild rice denest along east shore and north bay.
Crow Wing Crow Wing	Nelson Hole-in-the-Day	18016400		100 90	MNONR - Wildlife	Wild rice located in west half of lake. Wild rice is densest in northern 2/3rds of basin.		poor	low	fair	Within City of Nisswa wildlife refuse.	NA BDR	NatOut		MNDOT		Wild rice located in west half of lake. Wild rice is densest in northern 2/3rds of basin.
Crow Wing	Rice (Pratt's)	18031600		10	MNDNH - Wildlife MNDNR - Wildlife	Wild rice is densest in northern 2/3rds of basin. Wild rice can completely cover basin.		poor	low	difficul	Privately managed wild rice lake (Pratt).	BDR	NatOut		MNDOT		Wild rice can completely cover basin.
Crow Wins	Unnamed (Lost Rice)	18022800	157	***	M AMERICA - WEARING	Wild rice can completely cover basin.		noor	Insu	difficul	Large, 6' beaver dam removed in 2006, scatter- rice coverage	ed BDB	NatOut				Wild rice can completely cover basin.
				-				,									
Crow Wing	Dog	18010700			M MNDNR-Wildlife	Wild rice is found throughout the lake area in stands of var		poor	low	easy	MNDNR designated Game Lake.	BDR	VC	County	Co. DOT	Wild rice density is moderate to lush (3 ot 4), and its cond	Wild rice is found throughout the lake area in stands of var
Crow Wing Crow Winz	Pine Mud	18026100		60		Wild rice located along east shore, Pine River channel. Wild rice can cover a majority of open water basin.			low			NA	RD				Wild rice located along east shore, Pine River channel. Wild rice can cover a majority of poen water basin.
				60				fair		fair		NA.					Wild rice was found throughout the open water area of
Crow Wing	Rice (Blomberg's)	18012100				Wild rice was found throughout the open water area of the ba			low				NatOut				the ba Wild rice can cover a majority of open water portion of
Craw Wing Craw Wing	Terry Upper Whitefish	18016200 18031000			1 M MNDNR - Wildlife 1 USACOE - Crosslake RA	Wild rice can cover a majority of open water portion of basi		fair	low	difficul	20+ lake, Pine flows into take +30.	BDR	NatOut VC	Federal	USACOE, Part of Pine River Res. System		basi
-											254 Mars, Fille Mark Mills Tax 2 450.			1100101	CONCOC, PARTO PINE INVESTIGAT. SYSTEM		Wild rice density was scattered to moderate (2 to 3), and
Crow Wing	Lower Mission	18024300	739	50	A MNDNR-Wildlife	Wild rice density was scattered to moderate (2 to 3), and it						WLM	vc				it
Crow Wing	Smith	18002800		49		Wild rice located in NW bay, west and east shorelines.						BDB	7				Wild rice located in NW bay, west and east shorelines.
Crow Wing Crow Wing	Rice Bed Lows	18018700		47 45 4	MNDNR - Wildlife 4 A MNDNR - Wildlife	Wild rice can completely cover basin. Wild rice located around outlet (NW) and inlet (SE).		fair poor	low	difficult		BDR BDR	NatOut	Twp	Twp		Wild rice can completely cover basin. Wild rice located around outlet (NW) and inlet (SE).
Crow Wing	Twentytwo	18000800		42	THE STATE OF THE S	Wild rice located along NW and SE shoreline.		pour	non.	,		DDA	7	· mp	· wp		Wild rice located along NW and SE shoreline.
Crow Wing	Twin Island	18010600	85	42		Wild rice can cover a majority of open water basin.		poor		fair	History of 50 to 100% coverage in the 1950s & 60s.	N.A.	NatOut	Private			Wild rice can cover a majority of open water basin.
								роот	IOW	TAK	601.	70.0	National	Private			
Crow Wing	Whipple	18038700	345	40		Wild rice exists primarily in lower basin (Moberg's Slew).											Wild rice exists primarily in lower basin (Moberg's Slew). Wild rice in SE corner/outlet to Whitefish Lake and NE
Crow Wing	Arrowhead	18036600	285	40	USACOE - Cross Lake RA	Wild rice in SE corner/outlet to Whitefish Lake and NE corne		poor	low	fair		WIM	vc	Federal	USACOE, Part of Pine River Res. System		come Wild rice can completely cover open water portion of
Crow Wing	Unnamed (Nokasippi R. Rice E			40		Wild rice can completely cover open water portion of basin.				difficul			NatOut				basis.
Crow Wing	Mud	18013700	132	40	A MNDNR - Wildlife	Wild rice located in western 2/3rds of basin.		poor	low	fair		BOR	NatOut				Wild rice located in western 2/3rds of basin. History of almost complete basin coverage, outlet
Crow Wing	Birchdale	18017500	80	40	M MNDNR - Wildlife	History of almost complete basin coverage, outlet structure		poor		fair		BDR	NatOut				structure
Crow Wing	Little Pine	18017600			5 M MNDNR-Wildlife	History (1960s) of harvestable stands in NE &SW corners of I		poor	low	fair		BDR	NatOut				History (1960s) of harvestable stands in NE &SW corners of 3
Crow Wing	Dalter	18020400			2 M MNDNR-Wildlife/DU	Wild rice located around shoreline.		poor	low	easy		BDR	FC				Wild rice located around shoreline.
Crow Wing Crow Wing	Google Middle Cullen	18022300		11 6		Wild rice along outlet and outlet river channel.		poor	low	fair		NA	NatOut VC	Federal	USACOF, Part Gull I. Res System		Wild rice along outlet and outlet river channel.
Crow Wing Crow Wing	Middle Cullen Mississippi River	18037700	405	2 5	9				10/W		Brainerd dam?		***	rederal	osnicoc, Part Guil L. Res System		
Hubbard	Mantrap		1,770					fair	low	easy	1997	WLM	FC	Private	Industrial - 3M		
Hubbard		29007800	523	130 7				fair	low		1997 data: 200 ft fringe. Rack placed to manage		FC				
Hubbard	Fourth Crow Wing	29007800		130 7 118 14	,			rair	moderate	easy	level		H	Unknown			
Hubbard	Garfield	29006100		90 5		South bay.			low	easy							South bay.
Hubbard	Island	29025400		60 3	3 County	•		poor	low	easy	1996 data: west arm	BDR	c	County	Co. DOT		*

Geth Hobbard Rice Hobbard Rinct Crow Wing Hobbard Upper Mud Hobbard Third Crow Wing Hobbard Like Kangel Hobbard Crow Wing Hobbard Crow Wing Crow Wing	9017700 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	/	tair tair tair tair tair tair	low	difficul essy difficul essy easy	1997 data. 1997 data. Rack placed to manage level, private access. Rud's under bridge under 109 control level 1997 data	BOR BOR	e dien	add free and the state of the s	County Unknown	offen deta Co. Dot Co. Dot	and the same of th	/
Hubbard Spring Lale Issetti Upper Rice Itasca Nabares Basca Bowxtring Rasca Rice Rasca Pigeon Dam Rasca Basca Cut Foot Strux	2905490 43 5 30057700 208 208 31087700 2,855 2,459 89 3108190 6,800 1,335 26 3108960 911 729 1 31089400 511 500 4 3105760 2,344 427 53 MMONR-Water 3105760 2,344 427 53 MMONR-Water	w w	fair U. good IR good UR fair UR good fair UR good	high high modera high high modera	easy	Level affected by ditch 1994 data. 1997; 50%. In Bowstring Pivec 1997 data. Influenced by the Winnie dam	WUM WUW	NatOut NatOut NatOut VC VC VC	Stop log WPA dam Sliding grate	Federal State Federal	USFWS MNDNR – Wasers USACDE		Can cover a majority of basis in good years. Cow, Grouse and Muskrat bays.
Itasca Blackwoter Itasca White Oak Itasca Mud Itasca First Niver Itasca Rabbits	31056100 674 300 10 USACOE - Pokagemama Lake R 31077650 605 271 10 USACOE - Pokagemama Lake R 310206600 271 203 M 31033800 228 160 14 USACOE - Winnblgoshish LRA 31092300 200 157	Eastern half of basin. LU	JR good	modera low low low modera	easy difficul fair te difficul	1997. Influence by Pokegawa Dam – USACOE History of beaver problems, private access. Bog problem, sometimes restricts outlet.	MIN MIN	VC VC NatOut VC NatOut	Sliding grate	Federal Federal	USACOE USACOE Federal		Eastern half of basin.
Itasca Little Cut Poot Sloux Itasca Pokegama Itasca Dora Itasca Helen Itasca Raven Itasca Doon Itasca Spruce Itasca Spruce	31083200 477 89 111 31084000 109 76 31092500 97 70 M-L 31092100 666 67 3 M-MDNRWildfifeyDoon LA 31093400 322 56 M M-MDNRWildfifeyDoon LA 310334700 58 58	Primarily in Little Polegama bay.	UR fair fair UR good	tow modera modera tow tow	difficul difficul easy easy easy	History of beaver problems.	WLM WLM BDR BDR BDR	VC VC NatOut NatOut NatOut NatOut NatOut	8PL	Federal Federal Tribal Cooperative	USACOE R-LL SWCD, Dickson Lake Association		Primarily in Little Pokegama bay.
Hasca Swan Hasca Blackberry Hasca Sand Hasca Negel Hasca Prairie Hasca Prairie Hasca Mississipal River Hasca Bill Fork River	31050790 2.472 50 11 3103105070 2.40 50 2.40 MANDNR - Widdlfw/DU 31031050 3.311 50 M 31031400 11.67 45 31005300 29 1 31 industrial - MN Power 3164 74 3174 18		fair	modera low high modera	fair difficul fair	Also private management-lakedhore owners.	BOR	C NatOut NatOut NatOut Dam		Country	County Industrial – MN Power		
Itasca Bowstring River Koochiching Nett Koochiching Rat Root Lake Bosswood	3144 7 34000100 7,301 2,000 20 34000000 734 9 38004500 14,610 485	NE Black, Hoist, Rice, and Wind boys.	LIR fair	low	difficul	added from state harvester survey. 1982 data - Back bay: 150 acres, Wind bay: 20 acres, Holist	,						Mack, Horist, Rice, and Wind bays.
Lake Stony Lake Garden Lake Rice Lake Bonga	34066000 409 245 12 38078100 4,236 212 2 Industrial - MN Pawer 38046500 205 206 38076200 138 138		fair	modera łow	te difficul	1997 data 1997 data 1997 data	WLM	vc		Industrial	Industrial - MN Power		
Lake Wood Lake Hula Lake Lebo Lake Muskeg	33072950 567 125 38072860 121 121 3 38076600 132 99 38078800 178 71	NE Bay and Madden Cr. Bay lush, other areas scattered. Rice lush in Bay by portage coming from Wood Lake.	fair fair poor	low	difficul difficul difficul	1992 data 1970 data. Beaver problems				Federal	USFS-BWCA	Wild ricedensity is moderate (3), and its condition was goo Wild ricedensity is sparse (1), and its condition was fair	NE Bay and Madden Cr. Bay losh, other areas scattered. Bice losh in bay by portage coming from Wood Lake. Can completely cover basin. Surveyed annually by 1854
Lake Round Island Lake Campers Lake Cramer	38041700 58 58 10 A MNDNR-Widtle/R-FDL 38067900 56 56 13 M 38001400 69 55 15	Can cover a majority of basin.	854 good fair 854 fair	modera	te fair te fair te easy		BDR					Average # stalks per 0.5 sq. meters is 21-40.	Treaty Auth Can cover a majority of basin. Surveyed annually by 1854 Treaty Auth surveyed annually by 1854 Treaty Authority
Lake Cable Lake Send Send Lake Send Lake Send Lake Send Lake Send Lake Dumbbiel Lake Clark Lake Greenwood Lake Farm Send Lake Hoose Lake Model Model Lake Lake Lake Lake Lake Lake Lake Lake	30055000 21, 55 4 M 30055000 43, 5 0 30055000 4319 50 30045000 439 6 6 30045000 449 6 6 30045000 40 15 15 30045000 150 150 30055000 150 30055000 150 30055000 150 30055000 150	18	854 good poor good 854 fair 854 fair	modera low low modera low	fair easy easy	One bay havrice, 30 acres at most added from 1554M fac.						Average 8 of stalks per 0.5 to, meter is 0-20.	Can sower a migrate of basis. Surveyed amoughyby 1554 Treaty-kuth
Lake of the Woods Roseau Flowage Lake of the Woods Rainy River Lake of the Woods Winter Road River Mille Lacs Onemia	39/M/P001 200 100 MNDNR - Wildlife 39/5 12 39/4 6 48050900 2,250 3,350 38 MNDNR - Wildlife			low low high		Rice acres have disstically declined in late 199 added from state harvester survey, added from state harvester survey, 1964: 1350 acres of rice		vc vc	DI	State State	MNDNR - Waters		
Mille Lacs Ernst Pool Mille Lacs Dewitt Marsh	48003600 300 200 48002000 110 131 MNONR - Wildlife					Very good stand but poor seed production ago this year.	BDR	vc		State	MNDNR-Widtfe	Wild rice density is lush (4), and it conditions was fair (2	

							A.			, ib	10		de	· a defit				
		. Are		do	.01	A SHITT SPARE IN	- confirm		g pred		e ^{ger} e	<i>y y</i>	and t	Martine Martine		dast	A.	al and the second
	County	agen M.	CON NO.	STA PL S	A SULL LINE	P. AND SAFER	at the state of th	11217.57	and the same	Server.	Sept.	: series	Marine Col	He . Caller .	Care.	A. C.	MID P	Mr. Coll.
		*					7	-				Water levels managed by outlet dam on Platte				ů.	*	*
	Marrison	Skunk	49002600	320	256	A MNDNR - Wildlife	Throughout lake.		fair	low	easy	River, Rice Lak Water levels managed by outlet dam on Platte	WLM VC		State	MNDNR - Wildlife		Throughout lake. Excellent coverage at spots along shoreline in Rice Lake &
	Marrison	Rice	49002500		250	A MNDNR - Wildlife	Excellent coverage at spots along shoreline in Rice Lake & n		fair	low	easy	River, Rice Lak	WLM VC		State	MNDNR - WildlifeMNDNR - Wildlife		n
	Marrisan Marrisan	Twefve	49000600 49002000	159 75	80 75						difficul	Private access. Lake within Coon Lake State WMA.			Private	Private	common	
	Otter Tail	Ottertall River	56r1		. 3	13						Late within Cook Late state water					Luminum	
	Otter Tail	Lake Sixteen	56010000	107		5												
	Otter Tail Pine	Star Crooked	54038500 58002600	4809.0 94	85	4	historic rice camp			low		1989 Survey						
-	Pine	Hay Creek Flowage	58000500	66	40	5				low			FC		State	MNDNR-Waters		
	Pine	Willow River	58r1			6				low		added from state harvester survey. Rice has been observed intermittently, also						
	Bice	Mud	65005400	269	54							noticed on past			State	MNDNR-Wildlife		
												Typically 50 acres of rice, reaches 200 acres in						
	Stott	Fisher	70008700	396	190	USFWS - Minnesota Valley NWR				closed		good years. Typically 35 acres of rice, reaches 160 acres in	c		Federal	USFWS		
	Scott	Rice	70002500	328	160	USFWS - Minnesota Valley NWR				closed		good years.	c		Federal	Coop - USPWS, Private		
	Snott	Rue	70008800	316	170	IISEWS - Minnesota Valley NWR				rlosed		Typically 20 acres of rice, reaches 120 acres once every 12-			Federal	USFWS		
	Sherburne	Orrack	71/MP010		162	USFWS - Sherburne NWR				tioseu		Naturaliske			Federal	USFWS - Sherburne NWR		
	Sherburne	Rice			187	USFWS - Sherburne NWR	good rice crop in 2009											
	Sherburne Sherburne	Schoolhouse Pool Josephine Pool	71IMP009 71IMP008	225 143	90 72	USPWS – Sherburne NWR USPWS – Sherburne NWR						Natural lake that was ditched	WLM VC	Type "C" Type "C"	Federal Federal	USFWS - Sherburne NWR USFWS - Sherburne NWR		
	St. Louis	Knuckey	69080000	71			take can be about one half covered, some use by harvesters							.,,				
	St. Lauis	Lapond	69017700	176	176	M			fair		difficul	1972 data (100%), now 5% rice						Throughout lake, typically open in the center. Surveyed
	it. Lauis	Big Rice	69066900	2,072	1,700 6	4 MNONR - Wildlife	Throughout take, typically open in the center.	1854	good	high	easy	Outlet and pickerelweed control issues.	BDR FC		State	MNONR - Wildlife		annually by 1854 Treaty Auth
												Seeded by Forest Service in 1985. Possible old	BDB FC					
	St. Louis St. Louis	Seven Beaver Crane	69000200 69061600		600	3 USFS	Best rice is located in the narrows and south bay of lake, b		good	low	difficul	logging dam.	BDR FC		Federal	USFS		Best rice is located in the narrows and south bay of lake, b
	St. Louis	Vermillon River	69061300	1,125	562 6	6	?		good	high	easy							surveyed annually by 1854 Treaty Authority
	St. Louis	Big Rice	69017800	416	416	м			fair	high	difficul	1977 data, now 4 acres (1%).						No thick beds of rice this year with rice across most, also
	St. Louis	Butterball	69004400	442	400	1 MNDNR	No thick beds of rice this year with rice across most of the		good	low	difficul		BOR		State	MNDNR		called Long
	St. Louis	Birch	69000300	7,628	381	5 Industrial - MN Power			good	low	easy		MIW AC		Industrial	Industrial - MN Power		Can completely cover basin. Surveyed annually by 1854
	St. Lauis	Little Rice	69061200	266	266 3	II MNDNR - Widsfe	Can completely cover basin.		fair	high	635V		BDR C		State	MNDDT		Can completely cover basin. Surveyed annually by 1854 Treaty Auth
	St. Lauis	Hoodaa	69080200	252	252	3 M MNDNR - Wildlife	Rice found over the entire take at various densities from ra			low		1997 data Pike Bay: historically heavy rice, 250 acres, before	BDR					Rice found over the entire take at various densities from ra
	St. Louis	Vermillion			250	Dam?			poor		easy	structure, Rice Bay also	FC		State	MNDNR - Waters		
	St. Lauis St. Lauis	Stone	69093900 69004600		243 173 5	County 4 MNDNR - Wildlife				moderate		CCC program	BDR VC	WPA dam	County	County		surveyed annually by 1656 Treaty Authority
	st. Lauis	Stone	69004600	230	178 5	4 MAUNH-Wildite	*			moderate			BUK		scate	state		Can completely cover basin in good years. Surveyed
	it. Louis	Breda	69003700			66 A	Can completely cover basin in good years.	1854	good	high	fair						Average # of stalks per 0.5 sq. meter is 61-80.	annually by 1854 Treaty Auth
	it. Louis it. Louis	Bear Sandy	69011200 69073000		125	MNDNR	historic good crops, (Twin Lakes)	1854				1994 Survey data 1982 data. Used to manage but guit in 1992.	BOR C		State	State		
	t. Lauis	Pelican	69084100	11,944	119 1	16				maderate		Not managed currently	vc	WPA dam	County	County		
	St. Louis	Hay	69057900	114	114	MNONR - Wildlife							BDR		Federal	usrs		
	St. Louis	Shannon	69092500	135	108	5 M	Best rice located at outlet of lake with some fringe rice on			low		1996 data			Federal	uses		Best rice located at outlet of lake with some fringe rice on
	St. Louis	Leeman	69087500	284	90	Private, now public?						1997 data	BDR		Private	Private		
	Rt Lewis	timle Saudo	69072900	89	89		historic good cross. (Twin Lakes)					1982 data: mining tailings over flow. Used to manage, quit						
	it. Louis	Stone	69003500	87	85	M Twp	8	1854					BDR C		Twp	Twp		also called Tommila Lake
	St. Louis	Canosia WMA, Angell Pool	W0889001	500	80	MNDNR - Wildlife						1997 data. Seeded with 300 lbs in 1988 Historically good rice but not since the 60's.		BPL	State	MNDNR - Wildlife		
	St. Louis	Hay	69043500	78	78	MNONR - Wildlife	little rice in 2009: Barr Eng (PolyMet)					Coop: County	BDR VC		Cooperative	Coop - County, DNR - WIL FDL		
	St. Lauis	Low	69007000	353	71	2	only sparse rice plants in 2002		poor	low	easy	Data 1960's, currently 0% - beaver problems						
	St. Louis	Hockey	69084900	139	70	9				low		Excellent bed of rice still no good access to take						
	it. Louis	Moose	69079800	82		16 MNONR - Wildlife			fair	moderate		due to ne	BDR C		County	County		
	St. Louis St. Louis	Turpela Bug	69042700 69053100	76 71	61 53	м			poor		difficul	1985 date			County	County		
	St. Louis	Wabuse	69040800	64	51	MNDNR - Wildlife			fair		difficul	1997 data. Managed by Eveleth.	BDR					
	St. Louis	Dollar	69053400	51	51	MNON8 - Wildlife						Rice seems not to be able to expand due to othe aquatic year.	W Rhe					
	st. Louis	Dotter	DA023400	21	21	MADAN - WIGHN						aquatic (eg	BUN					
	St. Lauis	Hay	69041700	82	45		Best stand is on the east end of lake with the rice continui										Wild rice density is moderate (3), and its condition was goo	Best stand is on the east end of lake with the rice continui
	St. Louis	Mud	69079700	43	43	MNDNR - Wildlife			pppr		difficul	1972 data: 100 % (43 arres) Forest Service weeded in 1992.	BDR C		County	County		
	St. Louis	Rice	69057800	41	41	MNDNR -Wildlife	Good rice bed across lake and downstream.					1996 data	BDR		Federal	uses		Good rice bed across lake and downstream.
	St. Louis St. Louis	Washusk Number One Rainy	69040900 69069400 2	51	40	MNDNR - Wildlife			fair	low	difficul	1997 data. Managed by Eveleth.	BDR					
	st. Louis St. Louis	Wolf	69014300	456		17 M		1854	fair	moderate	difficul	Unknown rice production						
	St. Louis	Saint Louis River	69+2		1		headwaters, Norway Pt, historic in estuary	1854	fair	moderate	easy							
	St. Louis St. Louis	Pike River Rucetside	69/1	7.314		9	fair extential in some areas? on field data	1854	fair	low	easy.							
	St. Louis	Anchor	69064100	316			thicker rice in narrows and back bays, around 25% coverage											
	St. Louis	Rice	69018000	110			64N, 13W - fair potential for rice?, no field data, BWCA lake											

and the same of th	A Party	and their	COM SCIED	A SUE	and Section and the	all the state of t		and the	arate areas.	de de	· Francis	A CONTRACTOR OF THE CONTRACTOR	_d e	after date	NO. Park	A Carlotte
St. Louis	Little Indian Sioux River	0. (, ,			66N, 15W - good stands along banks, used by harvesters	400	40	400		Α.	0. 0.	0.	0.	···	*
	Pagggre	69002400				can have thick rice over entire lake, some use by harvesters										
	Petrel Creek	09002100				56N, 12W - thick rice in areas, used by harvesters into Breda L										
	Sand River					60N, 16W - can contain good stands										
	Washusk R2					55N, 15W - rice along shore, sparse in center										
	Partridge River					58N, 14-15W - number of stands with good density										
St. Louis	Rice					64N, 19W - can have thick rice over entire (ake (2007, 2008)										
										Wild rice was planted by the Belgrade						
Steams	Tamarack	73027800	470	235		Island dumps throughout				Sporstmen's Club in 19			State	MNDNR - Widlife		Island clumps throughout
										Water influenced by Turtle Creek watershed.						
Todd	Long	77006900	356	338	1 M MNDNR - Wildlife	Typically thickest in north portion of lake, more spotty in	fair	low	easy	Lake adjacent to	BDR	NatOut	Cooperative	Private, State		Typically thickest in north portion of lake, more spotty in
										Water influenced by Turtle Creek watershed.						
Todd	Mud	77008700	398	318	M MNDNR - Wildlife	Rice typically around shoreline, can cover almost all of ope	fair	low	fair	Lake within Turt	BOR		Private	Private		Rice typically around shoreline, can cover almost all of ope
										County ditch outlet on west side. Access thru						
Todd	Twin	77002100	317	159	M				fair	Ostendorf Stat			Cooperative	Private, Public		
										Affected by county ditch, flows into Long Lake,						
Todd	Rogers	77007300		130	1 M	Typically in a wide band around shoreline.		low	difficul	outlet has c		c	Private	Private		Typically in a wide band around shoreline.
Todd	Nelson	77000500	84	70	м	Entire take.			difficul	Private access.					Wild rice density is lush (4) to rank (5), and its condition	Entire lake.
										Problems with water from Turtle Creek						Most of rice on south end where connected to Thunder
Todd	Rice	77005100	675	60	M	Most of rice on south end where connected to Thunder Lake.	fair	low	difficul	watershed.			Cooperative	Private, Public		take.
Wabasha	Zumbro River					Zumbro Bottoms, McCarthy Lake - acreage, wildfile value										
Wadena	Yarger	80002200	384	346	M MNDNR-Wildlife	Entire lake, best stands are located on west side & across t	fair	moderate			BDR	VC	State	MNDNR - Wildlife		Entire lake, best stands are located on west side & across t
Wadena	Burgen	85001800	92	86	MNDNR - Wildlife	Covers 93% of water area.	poor	low	difficul				Private	Private		Covers 93% of water area.
Wadena	Strike	80001300	76	76		1988: sparce rice, 1963 100% covered.	fair	low	difficul							1988: sparce rice. 1963 100% covered.
Wadena	Round	80001900	58	58	A MNDNR - Wildlife/DU		fair	moderate	fair	1993	BDR					
	Granning	80001200	50			Entire take.		low	fair	1988 Sparcerice. 1963: 50 acres of rice (100%)	1					Entire lake.
Wadena	Blueberry		555.0			historic wild rice camp										
Waseca	Everson	81002700				attail/phrag. Fringe and open water. Varies in size and density year to year.				Stand was only about 10 acres in 2009						
Waseca	Lifty Sandy	81006700 85027400		38.0 De	ense stand around perimeter of the basin	Entire take				Within Suppois State WMA					In 2006, wild rice density was moderate (3) and in fair (2)	Fetire take.
Wright			118													